

Attorney Docket No. IMMR-050/04US

IFC  
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of Louis B. ROSENBERG et al.

Serial No.: 10/780,852

Examiner: Unassigned

Filed: February 19, 2004

Art Unit: 2173

Confirmation No. 2467

For: **COMPUTER INTERFACE APPARATUS INCLUDING LINKAGE HAVING FLEX**

U.S. Patent and Trademark Office  
220 20<sup>th</sup> Street S.  
Customer Window  
Crystal Plaza Two, Lobby, Room 1B03  
Arlington, VA 22202

**INFORMATION DISCLOSURE STATEMENT TRANSMITTAL**

Enclosed is an Information Disclosure Statement and accompanying Form PTO/SB/08A for the above-identified patent application.

- In accordance with 37 C.F.R. §1.97(b), no additional fee for submission of the IDS is required.
- In accordance with 37 C.F.R. §1.97(c), also enclosed is:
  - the fee of \$180.00 as set forth in 37 C.F.R. §1.17(p); or
  - a statement as specified in 37 C.F.R. §1.97(e).
- In accordance with 37 C.F.R. §1.97(d), a statement as specified in 37 C.F.R. §1.97(e) and the fee of \$180.00 as set forth in 37 C.F.R. §1.17(p) are also enclosed.
- Check No. \_\_\_ in the amount of \$\_\_\_ for the total fee is attached.
- A return receipt postcard is also enclosed.
- Please charge \$\_\_\_ to Deposit Account No. 50-1283 for the total fee. This paper is being submitted in duplicate.

The Commissioner is hereby authorized to charge any appropriate fees under 37 C.F.R. §§1.16, 1.17, and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 50-1283.

Dated: September 23, 2004

Cooley Godward LLP  
ATTN: Patent Group  
One Freedom Square  
Reston Town Center  
11951 Freedom Drive  
Reston, VA 20190-5656  
Tel: (703) 456-8000  
Fax: (703) 456-8100

By:

Respectfully submitted,  
**COOLEY GODWARD LLP**



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Erik B. Milch  
Reg. No. 42,887



Attorney Docket No. IMMR-050/04US

PATENT

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**INFORMATION DISCLOSURE STATEMENT  
UNDER 37 C.F.R. §1.97(b)**

In accordance with the duty of disclosure set forth in 37 C.F.R. §1.56,  
Applicant(s) hereby submits the following information in conformance with 37 C.F.R.  
§§1.97 and 1.98.

- Pursuant to 37 C.F.R. §1.98, a copy of each document cited in the attached Form PTO/SB/08A (1 of 2) is provided on the enclosed CD.
- No copies of the publications listed on the attached Form PTO/SB/08A (2 of 2) are being provided pursuant to 37 C.F.R. §1.98(d) because the publications were previously cited by or submitted to the Office in prior Application Serial Nos. 09/748,051 (now U.S. Patent No. 6,697,048 B2), 08/374,288 (now U.S. Patent No. 5,731,804), 09/140,717 (now U.S. Patent No. 6,201,533 B1) and/or 08/560,091 (now U.S. Patent No. 5,805,140) to which the above-identified application claims priority under 35 U.S.C. §120.
- No copies of any U.S. patents or U.S. patent application publications listed on the attached Form PTO/SB/08A are being provided pursuant to 37 C.F.R. §1.98 because this application was filed after June 30, 2003.
- Publication(s) \_\_\_ listed on the attached Form PTO/SB/08A were cited in a foreign search or examination report corresponding to \_\_\_ application serial no. \_\_\_ and mailed on \_\_\_.
- Enclosed is a copy of a non-English publication(s) \_\_\_. Pursuant to §609 of the M.P.E.P., Applicant submits the attached foreign search or examination report, which cites such non-English language publication(s).

- Enclosed is a copy of a non-English publication(s) \_\_\_. English language publication \_\_\_ (copy enclosed) claims priority from this non-English publication.
- Enclosed is an explanation of non-English publication(s) \_\_ for which an English translation is not available.
- Enclosed is an English translation of non-English publication(s) \_\_ cited in the attached Form PTO/SB/08A.
- Enclosed is a copy of pending patent Application Serial No. \_\_\_\_.

This Information Disclosure Statement is filed within any one of the following time periods:

- within three months from the filing date of this national application other than a CPA under 37 C.F.R. § 1.53(d);
- within three months from the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in this international application;
- before the mailing date of a first office action on the merits; or
- before the mailing of a first office action after the filing of a request for continued examination under 37 C.F.R. § 1.114.

It is respectfully requested that the Examiner consider the above-noted information and return an initialed copy of the attached Form PTO/SB/08A to the undersigned.

Dated: September 23, 2004

Respectfully submitted,  
COOLEY GODWARD LLP

Cooley Godward LLP  
One Freedom Square  
Reston Town Center  
11951 Freedom Drive  
Reston, Virginia 20190-5656  
(703) 456-8000  
(703) 456-8100

By:

  
\_\_\_\_\_  
Erik B. Milch  
Reg. No. 42,887



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(1 of 2)

PTO/SB/08A (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

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Substitute for form 1449A/PTO				<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>				Application Number	10/780,852
(use as many sheets as necessary)				Filing Date	February 19, 2004
				First Named Inventor	Louis B. Rosenberg
				Art Unit	2173
				Examiner Name	Unassigned
Sheet	1	of	3	Attorney Docket Number	IMMR-050/04US

U.S. PATENT DOCUMENTS					
Examiner	Cite No. <sup>1</sup>	Document Number Number Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		6,422,941	7/23/2002	Thorner et al.	
		6,160,489	12/12/2000	Perry et al.	
		6,111,577	8/29/2000	Zilles et al.	
		5,690,582	11/25/1997	Ulrich et al.	
		5,575,761	11/19/1996	Hajianpour	
		5,437,607	8/1/1995	Taylor	
		5,436,622	7/25/1995	Gutman et al.	
		5,283,970	2/8/1994	Aigner	
		5,186,695	2/16/1993	Mangseth et al.	
		5,175,459	12/29/1992	Danial et al.	
		5,165,897	11/24/1992	Johnson	
		5,022,384	6/11/1991	Freels	
		4,885,565	12/5/1989	Embach	
		4,484,191	11/20/1984	Vavra	
		4,464,117	8/7/1984	Foerst	
		4,333,070	6/1/1982	Barnes	
		4,262,549	4/21/1981	Schwellenbach	
		4,127,752	11/28/1978	Lowthorp	
		2,972,140	2/14/1961	Hirsch	

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)			
		JP	H2-185278		7/19/1990	Taito Corporation	
		JP	H4-8381		1/13/1992	Epoch Co. and Key-Planning Co.	
		JP	H7-24147		1/27/1995	Sega Corporation	
		JP	H5-192449		8/3/1993	Taito Corporation	

Examiner Signature	Date Considered
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Kind Codes of U.S. Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231

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Sheet	2	of	3	Attorney Docket Number	IMMR-050/04US

<b>OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS</b>		
Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
		PATRICK, "Design, Construction, and Testing of a Fingertip Tactile Display for Interaction with Virtual and Remote Environments," <i>Master of Science Thesis</i> , MIT, Aug. 1990, archived Nov. 8, 1990.
		CALDER, "Design of A Force-Feedback Touch-Introducing Actuator For Teleoperator Robot Control," <i>Bachelor of Science Thesis</i> , MIT, May 1983, archived June 23, 1983.
		WIKER, "Teletouch Display Development: Phase 1 Report," <i>Technical Report 1230</i> , Naval Ocean Systems Center, San Diego, July 1988.
		BLISS, "Optical-to-Tactile Image Conversion for the Blind," <i>IEEE Transactions on Man-Machine Systems</i> , Vol. MMS-11, No. 1, March 1970.
		JOHNSON, "Shape-Memory Alloy Tactile Feedback Actuator," <i>Armstrong Aerospace Medical Research Laboratory, AAMRL-TR-90-039</i> , August, 1990.
		KONTARINIS et al., "Tactile Display of Vibratory Information in Teleoperation and Virtual Environments," <i>PRESENCE</i> , 4(4):387-402, Harvard Univ., 1995.
		AUKSTAKALNIS et al., "Silicon Mirage: The Art and Science of Virtual Reality," ISBN 0-938151-82-7, pp. 129-180, 1992.
		EBERHARDT et al., "Inducing Dynamic Haptic Perception by The Hand: System Description and Some Results," <i>DSC-Vol. 55-1, Dynamic Systems and Control: Volume 1</i> , ASME 1994.
		GOBEL et al., "Tactile Feedback Applied to Computer Mice," <i>International Journal of Human-Computer Interaction</i> , Vol. 7, No. 1, pp. 1-24, 1995.
		PIMENTEL et al., "Virtual Reality: through the new looking glass," 2 <sup>nd</sup> Edition; McGraw-Hill, ISBN 0-07-050167-X, pp. 41-202, 1994.
		"Cyberman Technical Specification," <i>Logitech Cyberman SWIFT Supplement to Logitech Mouse Technical Reference and Programming Guide</i> , 4/5/1994.
		OUHYOUNG et al., "The Development of A Low-Cost Force Feedback Joystick and Its Use in the Virtual Reality Environment," <i>Proceedings of the Third Pacific Conference on Computer Graphics and Applications, Pacific Graphics '95</i> , Seoul, Korea, 21-24 August 1995.
		KACZMAREK et al., "Tactile Displays," <i>Virtual Environment Technologies</i> , Chap. 9, pp. 349-414.
		LAKE, "Cyberman from Logitech," at <a href="http://www.ibiblio.org/GameBytes/issue21/greviews/cyberman.html">http://www.ibiblio.org/GameBytes/issue21/greviews/cyberman.html</a> , 1994.

Examiner Signature	Date Considered
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(1 of 2)

PTO/SB/08A (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

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Substitute for form 1449A/PTO				<b><i>Complete if Known</i></b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>				Application Number	10/780,852
(use as many sheets as necessary)				Filing Date	February 19, 2004
				First Named Inventor	Louis B. Rosenberg
				Art Unit	2173
				Examiner Name	Unassigned
Sheet	3	of	3	Attorney Docket Number	IMMR-050/04US

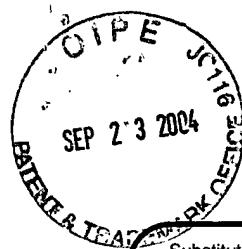
<b>OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS</b>		
Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
		"Component Maintenance Manual With Illustrated Parts List, Coaxial Control Shaker Part no. C-25502," Safe Flight Instrument Corporation, Revised 28 January 2002 (3 pages).
		"Technical Manual Overhaul Instructions With Parts Breakdown, Coaxial Control Shaker Part no. C-25502," Safe Flight Instrument Corporation, Revised 15 July 1980 (23 pages).
		SCANNELL, "Taking a Joystick Ride," <i>Computer Currents</i> , Boston Edition, Vol. 9, No. 11, November 1994
		YAMAKITA et al., "Tele-Virtual Reality of Dynamic Mechanical Model," <i>Proceedings of the 1992 IEEE/RSJ International Conference on Intelligent Robots and Systems</i> , Raleigh, NC, July 7-10, 1992
		NOLL, "Man-Machine Tactile," <i>SID Journal</i> , July/August 1972 Issue.
		ROSENBERG, "Virtual Fixtures: Perceptual Overlays Enhance Operator Performance In Telepresence Tasks," <i>Ph.D. Dissertation</i> , Stanford University, June 1994.

Examiner Signature	Date Considered
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## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

*(use as many sheets as necessary)*

Sheet

1

of

8

### *Complete if Known*

Application Number	10/780,852
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First Named Inventor	Louis B. ROSENBERG
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### U.S. PATENT DOCUMENTS

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		6,057,828	05-2000	Rosenberg et al.	
		6,050,718	04-2000	Schena et al.	
		6,046,727	04-2000	Rosenberg et al.	
		6,037,927	03-2000	Rosenberg	
		5,944,151	08-1999	Jakobs et al.	
		5,889,672	03-1999	Schuler et al.	
		5,880,714	03-1999	Rosenberg et al.	
		5,823,876	10-1998	Unbehand	
		5,781,172	07-1998	Engel et al.	
		5,769,640	07-1998	Jacobus et al.	
		5,739,811	04-1998	Rosenberg et al.	
		5,714,978	02-1998	Yamanaka et al.	
		5,704,791	01-1998	Gilio	
		5,701,140	12-1997	Rosenberg et al.	
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		5,634,794	06-1997	Hildreth et al.	
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		5,591,082	01-1997	Jensen et al.	
		5,542,672	08-1996	Meredith	
		5,532,585	07-1996	Oudet et al.	
		5,512,919	04-1996	Araki	
		5,473,235	12-1995	Lance et al.	
		5,467,763	11-1995	McMahon et al.	
		5,459,382	10-1995	Jacobus et al.	
		5,451,924	09-1995	Massimino et al.	
		5,451,294	09-1995	Massimino et al.	
		5,445,166	08-1995	Taylor	
		5,436,542	07-1995	Petelin et al.	
		5,428,748	06-1995	Davidson et al.	
		5,417,696	05-1995	Kashuba et al.	
		5,412,880	05-1995	Raab	
		5,402,582	04-1995	Raab	
		5,397,323	03-1995	Taylor et al.	
		5,396,266	03-1995	Brimhall	
		5,389,865	02-1995	Jacobus et al.	

Examiner  
SignatureDate  
Considered

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<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Kind Codes of U.S. Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

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# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet

**2**

of

**8*****Complete if Known***

Application Number	10/780,852
Filing Date	February 19, 2004
First Named Inventor	Louis B. ROSENBERG
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Attorney Docket Number

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**U.S. PATENT DOCUMENTS**

Examiner	Cite No.	Document Number Number Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		5,384,460	01-1995	Tseng	
		5,381,080	01-1995	Schnell et al.	
		5,351,692	10-1994	Dow et al.	
		5,286,203	02-1994	Fuller et al.	
		5,262,777	11-1993	Low et al.	
		5,259,894	11-1993	Sampson	
		5,259,120	11-1993	Chapman et al.	
		5,251,156	10-1993	Heier et al.	
		5,251,127	10-1993	Raab	
		5,243,266	09-1993	Kasagami et al.	
		5,235,868	08-1993	Culver	
		5,230,623	07-1993	Guthrie et al.	
		5,220,260	06-1993	Schuler	
		5,216,948	06-1993	Mitchell et al.	
		5,209,131	05-1993	Baxter	
		5,204,824	04-1993	Fujimaki	
		5,197,003	03-1993	Moncrief et al.	
		5,189,806	03-1993	McMurtry et al.	
		5,189,355	02-1993	Larkins et al.	
		5,187,874	02-1993	Takahashi et al.	
		5,184,306	02-1993	Erdman et al.	
		5,181,181	01-1993	Glynn	
		5,178,012	01-1993	Culp	
		5,148,377	09-1992	McDonald	
		5,142,506	08-1992	Edwards	
		5,139,261	08-1992	Openiano	
		5,132,672	07-1992	Clark	
		5,131,844	07-1992	Marinaccio et al.	
		5,128,671	07-1992	Thomas, Jr.	
		5,126,948	06-1992	Mitchell et al.	
		5,116,180	05-1992	Fung et al.	
		5,107,262	04-1992	Cadoz et al.	
		5,095,303	03-1992	Clark et al.	
		5,088,055	02-1992	Oyama	
		5,088,046	02-1992	McMurtry et al.	
		5,076,517	12-1991	Ferranti et al.	

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		5,072,361	12-1991	Davies et al.	
		5,050,608	09-1991	Watanabe et al.	
		5,040,306	08-1991	McMurtry et al.	
		5,007,085	04-1991	Greasias et al.	
		4,983,901	01-1991	Lehmer	
		4,983,786	01-1991	Stevens et al.	
		4,982,504	01-1991	Soderberg et al.	
		4,962,591	10-1990	Zeller et al.	
		4,961,267	10-1990	Herzog	
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		4,945,305	07-1990	Blood	
		4,942,545	07-1990	Sapia	
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		4,907,970	03-1990	Meenen, Jr.	
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## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet

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of

8

**Complete if Known**

Application Number	10/780,852
Filing Date	February 19, 2004
First Named Inventor	Louis B. ROSENBERG
Art Unit	2173
Examiner Name	Unassigned
Attorney Docket Number	IMMR050/04US

### U.S. PATENT DOCUMENTS

Examiner	Cite No. <sup>1</sup>	Document Number Number Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
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Sheet	5	of	8	Attorney Docket Number	IMMR050/04US

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		Country Code <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)			
		EP	0085518	A1	08-1983		
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